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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/853,856	05/10/2001	Brian D. Butler	30913-1001	6731

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EXAMINER

PATEL, PARESH H

ART UNIT PAPER NUMBER

2829

DATE MAILED: 12/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/853,856	<b>Applicant(s)</b> BUTLER ET AL.	
	<b>Examiner</b> Paresh Patel	<b>Art Unit</b> 2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 September 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9, 11-21 and 24-35 is/are pending in the application.
- 4a) Of the above claim(s) 4-7, 13-16, 18-20 and 24-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 8, 9, 11, 12, 17, 21 and 32-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☒ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1-3, 8-9, 11-12, 17, and 21 have been considered but are moot in view of the new ground(s) of rejection.

### ***Drawings***

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "20" has been used to designate both probe changer assemblies and too chamber assemblies. Similar is true for reference characters 110, 102, 524. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

3. Claim 8 is objected to because of the following informalities: In claim 8 "outer electrode" should read --non-circular outer electrode--; and "having said non-circular cross-section" should be deleted. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-3, 8-9, 11-12, 16-17, 21 and 32-35 are rejected under 35

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U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships is: a coaxial cable assembly with elements of coaxial probe.

Dependent claims are also rejected because they depend from rejected claim.

Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: a coaxial cable assembly and coaxial connector with elements of coaxial probe.

Dependent claims are also rejected because they depend from rejected claim.

Claim 8 recites the limitation "said non-circular cross -section" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Dependent claims are also rejected because they depend from rejected claim.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-3, 11-12, 17 and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tarzwell (5982187).

Regarding claim 1, (Currently Amended) Trazwell discloses a coaxial probe for high frequency testing of planar electric transmission line structures said probe comprising:

a probe mount [mount 35-38 for 41-43 in fig. 3] comprising a coaxial connector [211, or 105 of fig. 7 or barrel 143 of fig. 8 and lines 17-25 of column 7, particularly lines 23-25];

a center electrode [91 inside 105 or 201 inside 211 or 251 inside 105] mounted on said probe mount and electrically connected to a center conductor [91 out side 105 or 201 outside 211 or 251 outside 105 or (one of 178, 179, 180)] of said coaxial connector, wherein said center conductor may be placed in contact with a first point [pads of printed circuit board, lines 66-67 of column 7 or lines 38-41 of column 8] on a planar electric transmission line structure to be tested;

a non-circular outer electrode [202 or 203] mounted on said probe mount and electrically connected to ground [lines 37-41 of column 8], said outer electrode comprising a protrusion [end of 202 or 203 toward pads of PCB] to be placed in contact with a second point [pads of printed circuit board, lines 66-67 of column 7 or lines 38-41 of column 8] on the planar electric transmission line structure to be tested wherein a pitch of said protrusion can be varied by affixing [using 202, 203 of fig. 12 or 261, 264 of

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fig. 13 or 196,197 of fig. 11] said protrusion on said outer electrode to match a pitch between the first point and the second point without affecting a characteristic impedance of a coaxial cable assembly, the coaxial connector and said probe mount [inherent to high frequency and lines 39-44 of column 3 and lines 1-4 of column 7]; and a dielectric of non-uniform thickness [air between 91 and 202 or 203] between said center and said outer electrodes, wherein said coaxial probe is configured to match said characteristic impedance [inherent to high frequency and lines 39-44 of column 3 and lines 1-4 of column 7].

Tarzwel discloses all the elements except for a pitch of said protrusion can be varied **by affixing** said protrusion on said outer electrode to match a pitch between the first point and the second point. However, Tarzwel suggests the use of different probes with different pitches (see figures) for signal and ground pads at lines 26-33 of column 7. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the probe of Tarzwel with two electrodes to match a pitch between the first and second point so trace or pads can be tested, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japiske*, 86 USPQ 70.

Regarding claim 2, Tarzwel discloses said probe mount comprises a conductive plate [35-39].

Regarding claim 3, Tarzwel discloses said dielectric comprises air [air between 91 and 125 or 91 and 196 or 201 and 202 or 201 and 2003 or 251 and 261].

Regarding claim 11, Tarzwell discloses a pitch between said center electrode and said protrusion is fixed [pitch between 201 and 202 or 203].

Regarding claim 12, Tarzwell discloses said protrusion comprises a tapered point [see 202 or 203, 125 or 126].

Regarding claim 17, Tarzwell discloses said characteristic impedance of said probe substantially matches a coaxial cable characteristic impedance [lines 51-67 of column 1 with 44-45 of column 2].

Regarding claim 32 (Currently Added) Tarzwell discloses said outer conductor comprises an axial spring loaded conductor [71].

Regarding claim 33, Tarzwell discloses said coaxial connector comprises a resilient coaxial connector [143 and lines 11-13 of column 7].

8. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tarzwell as applied to claim 1 above, and further in view of Beck et al. (US 4138643).

Regarding claim 8, Tarzwell discloses all the elements except for said outer electrode comprises **a conductive tube** having said non-circular cross-section. Beck et al. (hereafter Beck) in fig. 6-7 discloses said outer electrode [91] comprises **a conductive tube [91]** having said non-circular cross-section [fig. 7]. It would have been obvious to a person having ordinary skill in the art to modify the outer electrode of Tarzwell with conductive tube as taught by Beck, in order to secure protrusion (ground probe 90 of Beck) to a conductive cylinder to provide ground connection during high

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frequency testing of PCB and to provide impedance matching between unit under test and the test equipment (using central conductor (24 of Beck) of coaxial connection).

Regarding claim 9, Beck discloses said outer electrode has a cross-section selected from the group consisting of oval [fig. 7], square, rectangular, hexagonal, L-shaped, and U-shaped.

9. Claims 21 and 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beck et al. (US 4138643).

Regarding claim 21, Beck et al. (hereafter Beck ) in fig. 5-6 discloses a coaxial probe for high frequency testing of planar electric transmission line structures, said probe comprising:

a probe mount [63, 10];

a center electrode [71 of tip 24] mounted on said probe mount, wherein a center conductor may be placed in contact with a first point [point where 24 is connected to PCB] on a planar electric transmission line structure to be tested; and

an outer electrode [91] comprising a protrusion [90], wherein a pitch of said protrusion can be varied by affixing said protrusion on said outer electrode to match a pitch between the first point and a second point without affecting a characteristic impedance [lines 61-68 of column 7] of a coaxial cable assembly, a coaxial connector and said probe mount, attached on a non-circular cross-section casing wherein said coaxial probe is configured to match said characteristic impedance.

Beck discloses all the elements except for a pitch of said protrusion can be varied **by affixing** said protrusion on said outer electrode to match a pitch between the



first point and the second point. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the probe electrodes of Beck to match a pitch between the first and second point as claimed for testing, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japiske*, 86 USPQ 70.

Regarding claim 34 (Currently Added) Beck discloses said outer conductor comprises an axial spring loaded conductor [91 and lines 11-16 of column 8].

Regarding claim 35 (Currently Added) Beck discloses said coaxial connector comprises a resilient coaxial connector [75, 75a with 21].

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

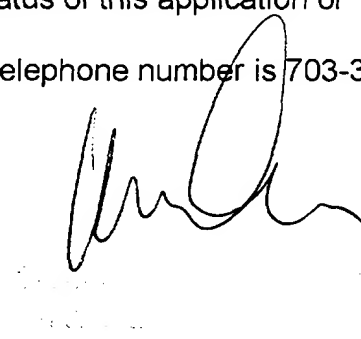
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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paresh Patel whose telephone number is 703-306-5859.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kammand Cuneo can be reached on 703-308-1233. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

A handwritten signature in black ink, appearing to read 'Paresh Patel', is written over a faint, circular official stamp. The signature is fluid and cursive.

Paresh Patel  
December 13, 2003